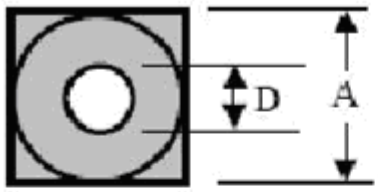
Wiring Guide

1. PREFIX

IC: U* Transistor: Q* Single Resistance: R* OSCILLATOR: OSC*
Capacitance: C* SIP Exclusion: RA* Variable Resistor: VR* CRYSTAL: X*
Inductance: L* DIP Exclusion: RP* Variable Capacitor: VC* CONNECTOR: J*
Battery: L* JUMPER: JP Diode Array* SPEAKER: BZ* DIODE ARRAY: DA*
FUSE: F* Diode: D* Transformer: T* SWITCH: SW*

2. REFERENCE DESINATOR sequence: from top to bottom, left to right, each has its component number.
   Component side: tracks from 1, such as U1, C1, U2, C2…
   Solder side: tracks from 501, U501, C501, U502, C502...

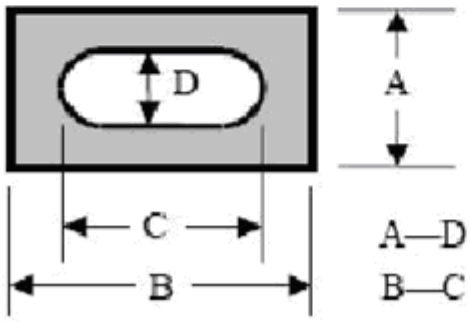
3. The circular PAD diameter (or quadrate aperture) and the revised PAD in value of at least 16mil above.



Drilling diameter D, PAD diameter A

When D < 100mil, A – D ≧ 16mil
When D ≧ 100mil, A – D ≧ 20mil

Drilling a Square Hole:



A—D ≧ 24 mil
B—C ≧ 24 mil

4. In general, a round PAD will be used, unless under the following circumstances where a squared PAD is used:
   (1). IC pitch
   (2). Pieces of polarity has "+"
   (3). K" DIODE
   (4). Transistor “E”
   (5). Connector feet
   (6). 2-PIN and 3-PIN jumper

(7). Test Out
(8). Oscillator feet
(9). Exclusion (SIP or DIP) feet
(10). DIP Switch feet
(11). DIP filter feet

5. IC of DIP type, resistance, exclusion, diode…etc. includes 37mil tin PAD and 54mil drills.

6. Vertical parts (includes capacitance and transistor) includes 56mil tin PAD and 39mil drills.

7. ANTI-PAD: PCB insulating pad
   When drilling diameter is ＜0.016″ , ANTI-PAD's should be greater than 16mil
   When drilling diameter is ≧0.016″ , ANTI-PAD's should be greater than 24mil
   When drilling diameter is ≧0.1″ , ANTI-PAD's should be greater than 30mil
   When drilling a square hole, ANTI-PAD would be a size of squares and each side should be 30mil greater than its edge; ANTI-PAD (size of squares) may continue for pad of a circular shape

8. Via holes 1: 18mil drilling diameter; 30mil tin PAD; and 42mil ANTI-PAD.
   Via holes 2: 13mil drilling diameter; 25mil tin PAD; and 29mil ANTI-PAD.

9. Via hole with diameter less than 8mil (usually is a laser drilling) cannot make a thermal PAD.

10. 1/4W resistance, 1/8W resistance, and diodes (AXIAL TYPE) should be using 0.5" pitch. Unless otherwise specified, 0.4" pitch can be used.

11. Common ceramic capacitor (0.2" pitch); quality capacitor (0.1" pitch).

12. Power line width and space should be determined in accordance with the requirements for manufacturing specifications. Unless otherwise specified, the power line width and space should be at least 50mil.

13. Line width should be 6mil and space width should be 5mil. 8mil should be applied for high efficiency boards.

14. Signal lines and board edges should be at least kept at a distance of 25mil. If there is a broken edge, the lines and drilling holes should be at least kept a distance of 25mil; tin side and board side should be kept at a distance of 20mil.

15. For any types of boards, non-PTH holes of trace and non-pad should be at least kept a distance of 15mil.

16. Any solder mask pad should be at least 6mil bigger than the original.

17. Text symbols, graphics, and the line width text: 6~ 10mil, size 70x55mil±15mil.

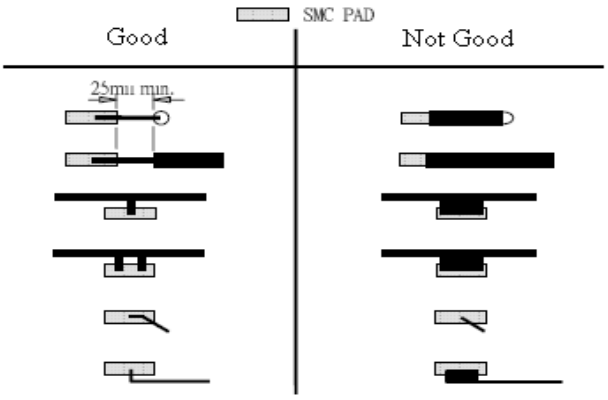
18. Any parts of graphics should fit into the parts of how they've formed and under which a clear identified code is marked on the first pin.

19. There should be a clear direction of pitch parts with polarity.

★ Polar parts should be marked "+"
★ The connector is shrouded on all four sides
★ 3-pin jumper posts should be indicated on pins 1 or 3
★ Pin numbers for gold finger should be marked
★ Pin numbers in diode are not required, but the parts of graphics should be clearly shown with the direction of pitch parts with polarity
★ Transistor should have its pins marked
★ Power connector should have its power names and pins marked
★ QFP, PLCC, PGA, and other four-side parts should have its pin marked
★ For every 100 pins and above of QFP with PIN10, PIN20, PIN30, PIN40…etc., a broken line (about 40mil in length) for each 10 pin is required for counting pin numbers.

20. Text, symbol, and graphic cannot touch the pad on parts; via pad and fuse try should not touch (must include with rated voltage, rated current and fuse type; general fuse type: FUSE 125V F5A.

21. SMC Board-on IDC Cable Connectors



22. Avoid acute angles for trace corners.